

## **UNIPOLAR ELECTRICAL TO BIPOLAR OPTICAL CONVERTER**

### **ABSTRACT OF THE INVENTION**

An optical amplitude modulator (16) has a first input (13) for receiving a continuous optical signal, a second input (17) for receiving a bipolar data encoded electrical signal, and a Mach-Zehnder interferometer transfer biased at  $V_\pi$  for modulating the continuous signal based on the bipolar data encoded electrical signal for generating an AMI modulated optical signal having three electric field levels,  $+/E$  and 0, and two power levels, 0 and P, such that the resultant modulated signal is both amplitude and phase modulated.